

ERIOPHYID STUDIES C-12

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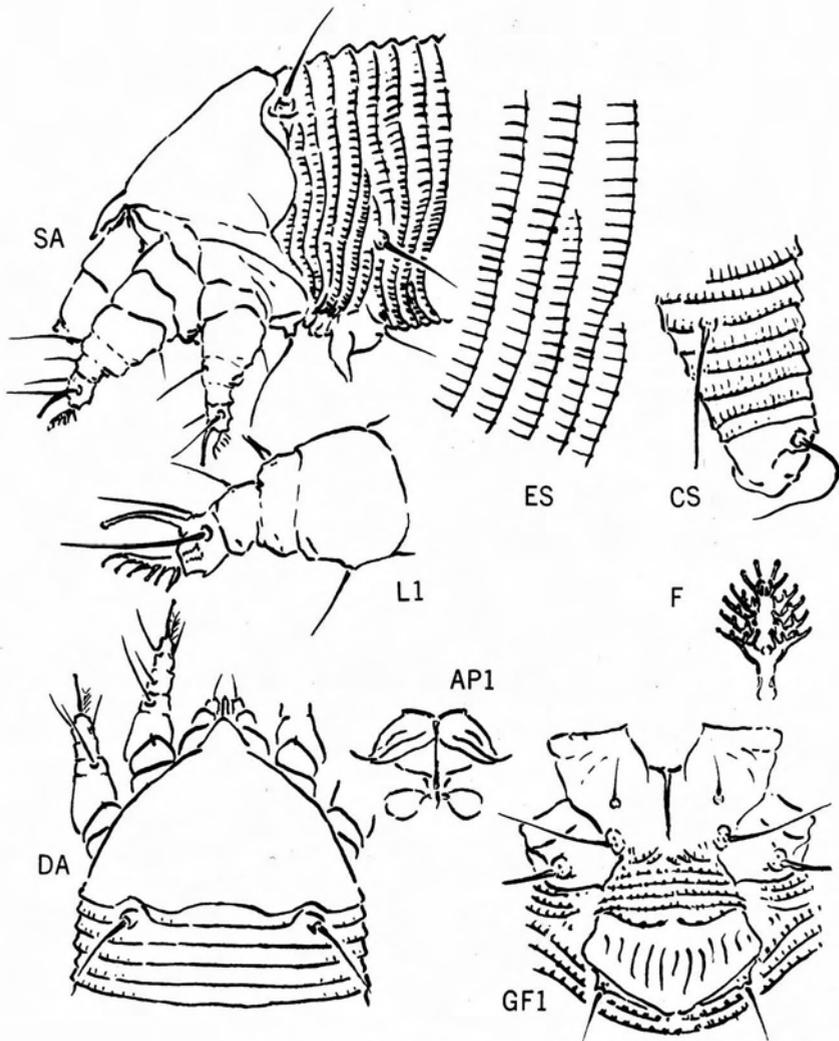


Plate 1 - *Aculops knorri*, new species

Aculops knorri, new species

Plate 1

Colonies of this species are found under thin white webbing along the midrib and veins on the upper surface of the leaves of its host. While the precise method this mite has of spinning the web is unknown, the invariable association of the mite with the web, and the fineness of the individual strands, would seem to clearly indicate that the mite makes the web. It might be expected that an eriophyid with the unusual habit of spinning silk should have structural features making it possible to segregate it generically. This has not proved to be the case, and the species can only be assigned to the 'waste-basket' genus Aculops. The only unusual structural feature of the mite is the thickened legs, with most of the increased size on the femur. This species is most appropriately named for its discoverer, Dr. L. C. Knorr.

Female from anterior end of frontal shield lobe to end of terminal lobes 128 μ -148 μ long; 42 μ thick, 45 μ -50 μ wide. Body robust-fusiform. Color in life probably light amber. Rostrum 20 μ long, curving down; ant-apical seta 4.5 μ long. Cephalothoracic shield 42 μ long, 48 μ wide, broad-triangular; no shield design except rear marginal line crossing in front of dorsal tubercles and curving around tubercles and with a broad central convexity. Dorsal tubercles 23 μ apart; dorsal setae 13 μ long and projecting up and divergently to rear. Legs unusually robust, with segments shortened. Forelegs from trochanter base 31 μ long; tibia 3 μ long, with 7.5 μ seta at 1/3; tarsus 4 μ long; claw 7.5 μ long; featherclaw broad, with 6-7 rays. Hindlegs 21 μ long, tibia 3 μ long, tarsus 3.5 μ long, claw 7 μ long. Coxae lacking much ornamentation; forecoxae with moderately long sternal line not divided to rear. First setiferous coxal tubercles some distance behind anterior coxal approximation and directly ahead of second tubercles; second tubercles a little ahead of line across third tubercles. Abdominal thanosome with about 31 tergites and 48 sternites. Microtubercles mostly thin and elongate from rear margins, more elliptical ventrally especially to rear; on tergites the microtubercles fading out dorsally. Lateral seta 24 μ long, on sternite 5-6 behind shield; first ventral seta 22 μ long, on sternite 17; second ventral seta 15 μ long, on sternite 31. Abdominal telosome with about 5 rings; microtubercles abruptly fainter in comparison to rear part of thanosome; telosomal seta 17 μ long. Accessory seta minute. Female genitalia 14 μ long, 22 μ wide; seta 9 μ long; female coverflap with about 12 longitudinal ribs.

Male 110 μ -120 μ long.

Type locality: Plant Quarantine Compound, Bangkhen, Thailand

Collected: April 16, 1975, by Dr. L. C. Knorr, Project Manager Plant Protection Service, United Nations Project No. THA 68/526

Host: Lepisanthes (Erioglossum) rubiginosa (Roxb.) Leenth.

Plant family - Sapindaceae; Plant Order - Sapindales

Relation to host; the mites occur in considerable numbers on the upper leaf surfaces and always under a thin white webbing evidently spun by these mites. There may be some slight rusting. The webs are always associated with veins, especially the midrib.

Type material: a type slide, and two paratype slides, so designated. There is also an envelope with dry leaves from which the slides were made.

Copies of the 'C' Series are obtainable from -

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California Department of Agriculture
1220 N St.
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Abacarus setariae, new species

Plate 2

The almost total absence of a middorsal longitudinal ridge in the broad dorsal trough, which ridge is characteristic of the genus, is the principal feature of *setariae*. The ridge is, however, indicated by a longitudinal thickening for about the first 33 tergites of the 43 tergites possessed by the species.

Female from anterior point on frontal lobe to terminal rear lobes 175 μ -220 μ long, width behind shield 50 μ , thickness 40 μ . Body elongate-fusiform, with broad dorsal longitudinal trough. Color in life probably light yellowish. Rostrum 21 μ long, projecting down; antapical seta 7.5 μ long. Shield 47 μ long by 46 μ wide, elongate-subtriangular with rather acute frontal lobe; frontal lobe with a pair of apical lobes, one side usually longer. Median shield line present on rear 3/4, admedian lines subparallel to median, close to it, extending from sides of apex of frontal lobes to rear shield margin. Curved but incomplete submedian line in front of dorsal tubercle. Sides of shield largely unmarked; some granules above coxae and 2-3 partial rings below dorsal tubercle. Dorsal tubercles 23 μ apart; dorsal setae about 10 μ long, projecting straight back. Foreleg from trochanter base 29 μ long; tibia 5 μ long, with 4.5 μ seta at 1/3-1/2; tarsus 6.5 μ long; claw 8 μ long; featherclaw 8-rayed. Hindleg 28 μ long, tibia 4 μ long, tarsus 6.5 μ long, claw 9 μ long. Coxae ornamented with lines and granules; sternal line of moderate length, not forked posteriorly. First setiferous coxal tubercles slightly farther apart than second and a little ahead of front end of sternal line. Second coxal tubercles almost in a line with third tubercles. Abdominal thanosome with about 43 tergites and 56 sternites, sternites completely microtuberculate, the microtubercles elliptical and ahead of rear margins anteriorly, becoming elongate and running to margins posteriorly. Tergites with some lateral microtubercles anteriorly, the microtubercles extending more dorsally posteriorly and extending over margins as fine points. Thanosome with broad dorsal central trough but hardly with a central longitudinal ridge; the only indication of a central ridge being a longitudinal thickening and some microtubercles, extending to about 33 tergites behind shield. Lateral seta 35 μ long, on sternite 7 behind shield; first ventral seta 42 μ long, on sternite 19; second ventral 18 μ long, on sternite 36. Abdominal telosome with 5 rings, the microtubercles elongate below, above becoming stronger and pointed over margins to rear; seta 30 μ long. Accessory seta 4 μ long. Female genitalia 15 μ long by 20 μ wide; coverflap with about 10 longitudinal ribs; seta 14 μ long.

Male not seen.

Type locality: Piracicaba, State of Sao Paulo, Brasil

Collected: October 8, 1975, by Sergio Batista Alves

Host: *Setaria genitulata* (Lam.) Beauv., family Graminae, order,

Glumiflorae

Relation to host: the mites function as rust mites, yellowing the leaves

Type material: a type slide and two paratype slides

an envelope with dry plant parts bearing mites

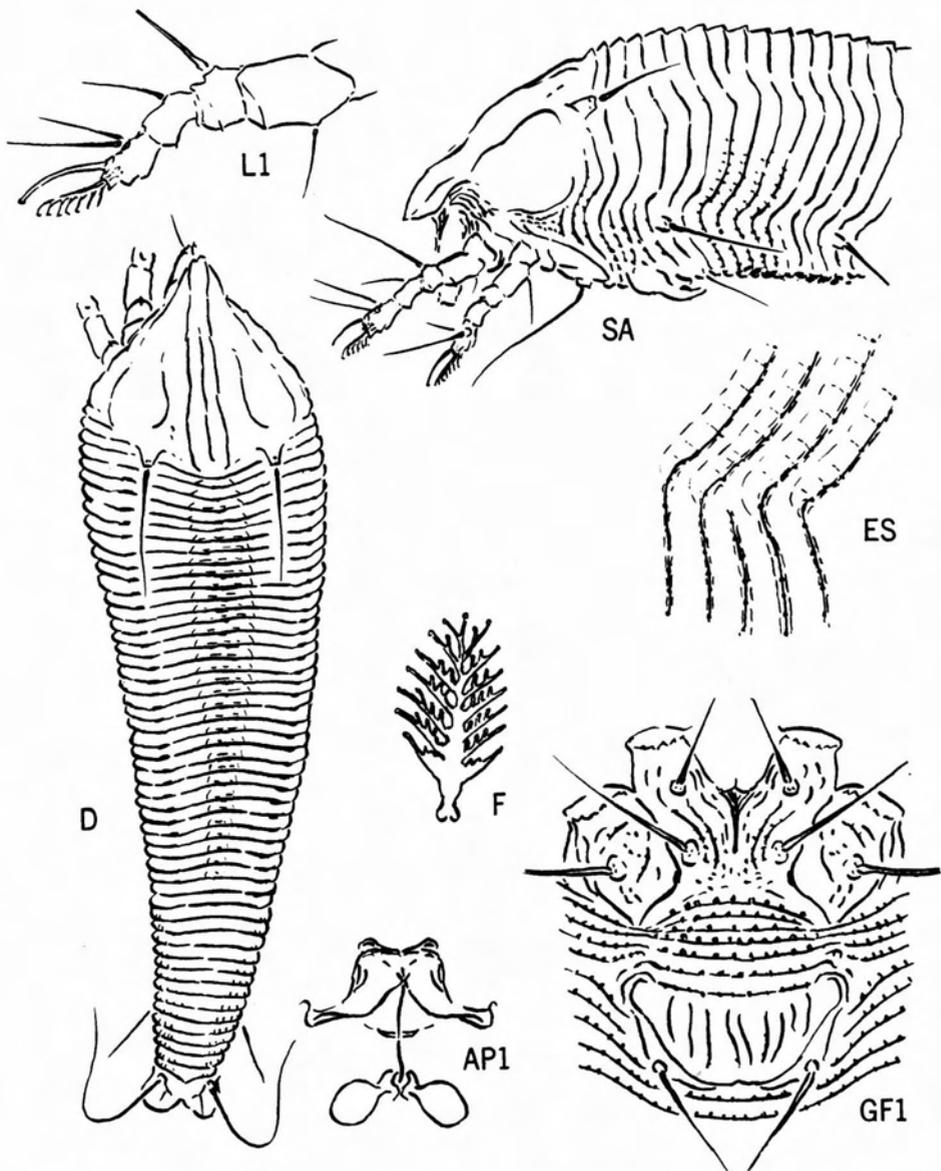


Plate 2 - *Abacarus setariae*, new species

Cecidophyes ophiogonis, new species

Plate 3

The principal distinguishing feature of this species is the apically upturned anterior lobe. The monocotyledonous host is also unusual for a member of this genus.

Female 125 μ -150 μ long, 40 μ thick, 50 μ wide. Body fusiform; color in life probably yellowish-white. Rostrum 26 μ long, projecting down; ant-apical rostral seta 5 μ long. Shield 41 μ long by 50 μ wide. Shield design a series of irregular and more or less obscure longitudinal lines nearly all of which are represented by surface thickenings which bear granules. Median line complete from anterior cross line at about 1/5. Anterior lobe with a pair of convex lines from anterior edge on each side of center, and another pair of lines curving back from front of lobe. A prominent cross line at about 1/5, curving back laterally and extending back to rear margin; several longitudinal and lateral lines branching from this cross line. Admedian lines subparallel to median and extending back from cross line at 1/5, meeting second line across median at just before 1/2 and a second cross line from median at about 3/4. Submedian lines irregularly placed between admedians and surrounding curved line; lines descending to lateral margin along curved line. Fore-legs from trochanter base 29 μ long; tibia 8 μ long, with 10 μ seta at about 1/2; tarsus 6 μ long; claw 4.5 μ long; featherclaw 4-5 rayed. Hind-leg 27 μ long, tibia 4 μ long, tarsus 7 μ long, claw 6 μ long. Forecoxae narrowly meeting centrally, setiferous tubercles with lines, the second tubercle half surrounded. First setiferous coxal tubercle ahead of second and ahead of anterior coxal approximation; second tubercles ahead of level of third tubercles. abdominal thanosome with about 28 tergites and 46-49 sternites. Microtubercles on tergites somewhat elongate but faint; on sternites pointed over sternal margins. Lateral seta 15 μ long, on sternite 8 behind shield; first ventral seta 33 μ long, on sternite 18; second ventral seta 9 μ long, on sternite 28. Abdominal telosome with about 6 rings, the microtubercles on ring margins. Telosomal seta 17 μ long. No accessory seta. Female genitalia 16 μ long; 22 μ wide; cover-flap with about 12 to 16 irregular longitudinal ribs in two distinct ranks; seta 8 μ long.

Male 115 μ -130 μ long; genitalia with unmarked areas extending laterally from anterior lateral angles.

Type locality: Bangkok, Thailand

Collected: Nov. 28, 1974, and January 23, 1975, by Dr. L. C. Knorr, and sent under Nos. T157a and T186a.

Host: Ophiopogon japonicus Ker.-G., of the Ophiogonideae, Liliaceae, order Liliiflorae.

Relation to host: the mites live on the underside of the leaf blades and rust the leaves. The plants are in a greenhouse.

Type material: a type slide bearing the No. T186a
five paratype slides bearing both numbers
two envelopes of dry material from which the slides came

Designations on Plates -

AP1 - Internal female genital structures
CS - Lateral view of caudal section
D - Dorsal diagram of mite
DA - Dorsal view of anterior section
ES - Lateral epidermal structures
F - Empodium or featherclaw
GF1 - Female genitalia and coxae
L1 - Left anterior leg
L2 - Left second leg
S - Side diagram of mite
SA - Anterior side view of mite
Telosome - caudal abdominal section beginning with third ventral seta
Thanosome - abdomen from rear shield margin to telosome

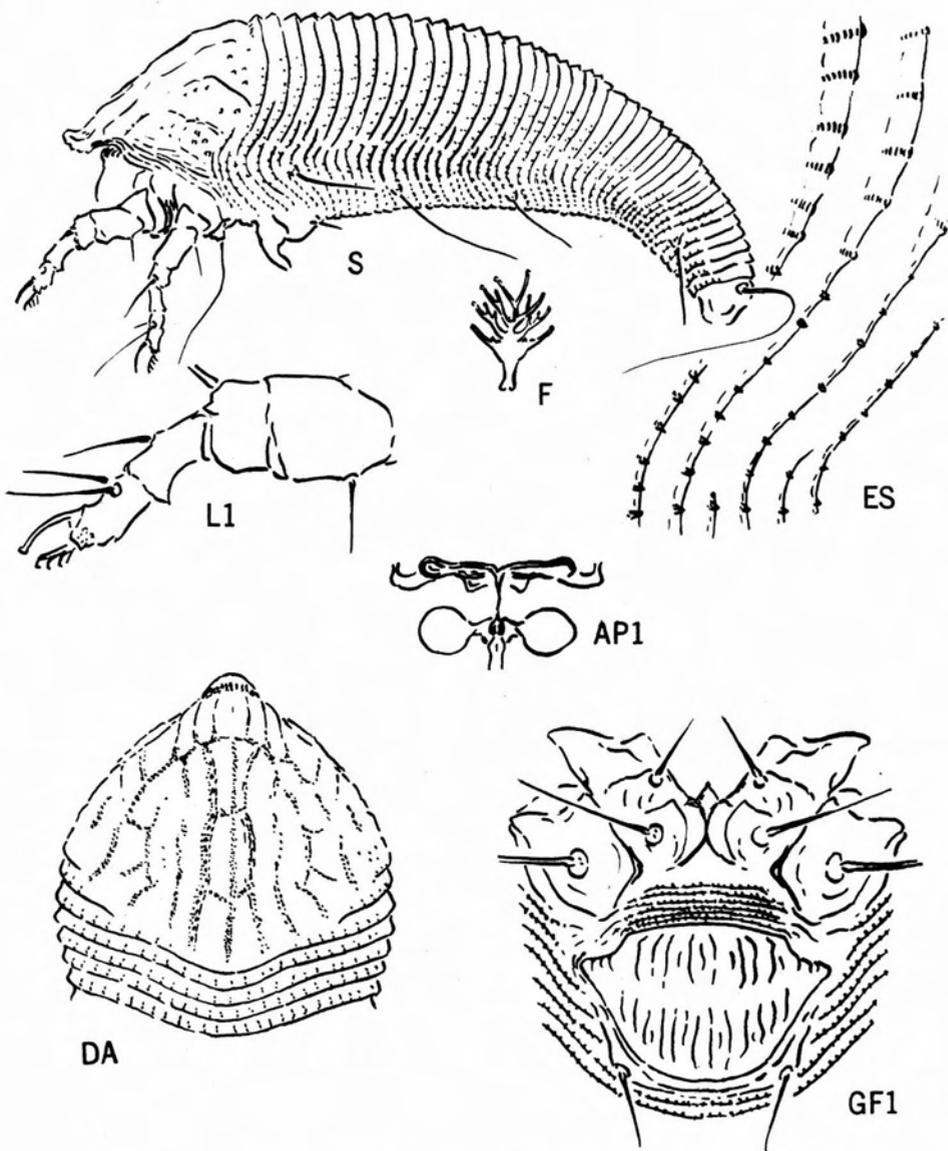


Plate 3 - *Cecidophyes ophiopogonis*, new species

Paraphytoptus konoella, new species

Plate 4

This species has 4-rayed featherclaws, which is an unusual character in the genus. All other species on record have featherclaws with 5 rays or more, and the shield patterns they have are more elaborate. I am naming this species for the collector, Tokuro Kono, who finds many eriophyids on his travels.

Female from anterior end over rostrum to the terminal lobes 140μ to 152μ in length; thickness 36μ . Rostrum 28μ long, projecting down; antapical seta on rostrum 2μ long. Shield 26μ long by 30μ wide, sub-semicircular in anterior outline with central part slightly acuminate. Median shield line present on rear $4/5$, broken. Admedian lines complete and sinuate, recurving ahead of rear shield margin. First submedian line present only on anterior $1/4$ of shield; most of shield area lacking longitudinal lines; granules present laterally; 2 or 3 partial rings below dorsal tubercle. Dorsal tubercles 18μ apart; dorsal setae 25μ long, projecting straight back. Foreleg 25μ long measured from trochanter base; tibia 7μ long, with 4μ seta at $1/4$; tarsus 5μ long; claw 7μ long, curved; featherclaw 4-rayed. Hindleg 24μ long, tibia 5μ long, tarsus 5μ long, claw 7μ long. Coxae generally granular; sternal line thin, undivided posteriorly. First setiferous coxal tubercles slightly behind anterior coxal approximation and slightly farther apart than second tubercles; second tubercles well ahead of level of third tubercles. Abdominal telosome with about 30 narrow anterior rings dorsally, followed by about 13 broader rings; ventrally with about 68 rings. Wider rings begin above second ventral seta. Rings completely microtuberculate except for dorsal rear; microtubercles rounded and on ring margins ventrally, elongate dorsally, especially on broader dorsal half-rings. Lateral seta 8μ long, on ventral half ring 10 behind shield margin. First ventral seta 44μ long, on ring 28; second ventral seta 6μ long, on ring 46. Abdominal telosome with 5 rings, the microtubercles suppressed, especially dorsally; telosomal seta 14μ long. Accessory seta 3.5μ long. Female genitalia 11μ long by 19μ wide; coverflap with 8-10 longitudinal ribs. Genital seta 11μ long.

Male 140μ long.

Type locality: The Ark, Aberdare National Park, Kenya

Collected: September 23, 1975 by Tokuro Kono

Host: Solanum sodomense L. (Solanaceae, Tubiflorae) sodom apple

Relation to host: The mites live in bud hairs.

Type material: an envelope with dry plant parts and mite mummies with the above data

A type slide with the above data

Four paratype slides

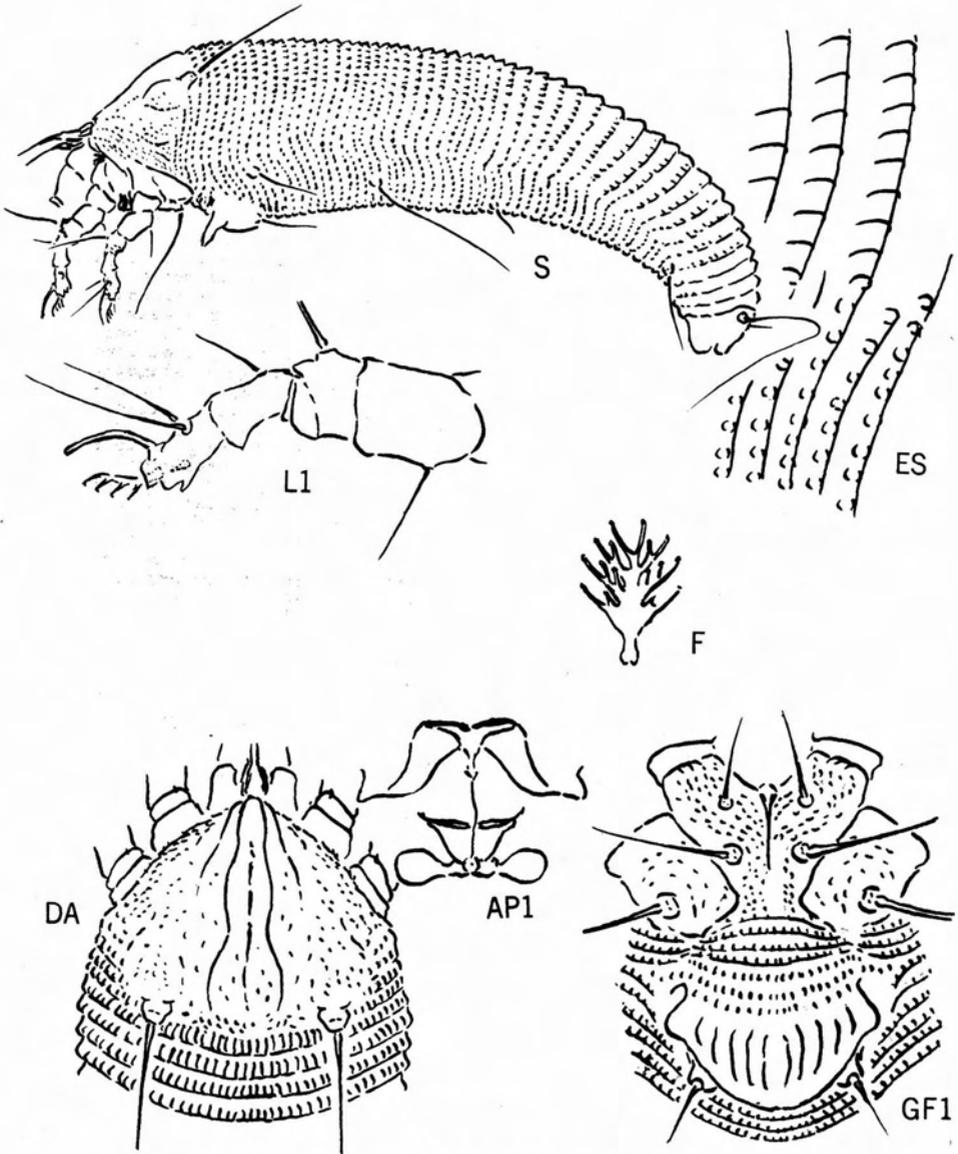


Plate 4 - *Paraphytoptus konoella*, new species

Eriophyes potosensis, new species

Plate 5

On potosensis the shield is somewhat attenuate anteriorly, the female has 6-rayed featherclaws while the male has 5-rayed structures, and the abdominal microtubercles are pointed. Ambrosia is the host of this new species and two other Ambrosia Eriophyes are on record from the western hemisphere. One is ambrosiae Cook, listed by Nalepa in Marcellia, Vol. 25, p. 156, 1929; it is from Cuba and Nalepa listed it as a nude name. In other words the mite itself has not been properly characterized.

The second is boycei Keifer, Eriophyid Studies XIII, Bul. Cal. Dept. Agr. XXXIII(3):213, Oct. 1943. Eriophyes boycei has a 4-rayed featherclaw and the shield pattern has more lines than potosensis. One of the more important features on potosensis is the diagonally outward line of dashes in front of the dorsal tubercle.

Female from anterior shield edge to terminal lobes 160 μ -210 μ long, about 44 μ thick. Body wormlike; probably light yellowish-white in life. Rostrum 17 μ long, projecting forward and down; antapical seta 5 μ long. Cephalothoracic shield 29 μ long by 38 μ wide, subtriangular with front somewhat attenuate and slightly extended forward. Shield design of lines and lines of dashes, with separate granules and dashes interspersed. Median line somewhat broken, on rear 2/3; admedian lines complete, subparallel to median and gradually diverging to rear. First submedian from side of admedian close to front and extending back toward dorsal tubercle, curving out before tubercle and ending at an outwardly diagonal line of dashes across in front of tubercle; second submedian angling outward from middle of first and ending at partial rings below dorsal tubercle. Side of shield with longitudinal granular band and longitudinal line just above band; about three partial rings below tubercle. Dorsal tubercles 19 μ apart, directing 21 μ setae divergently to rear. Foreleg from trochanter base 26 μ long; tibia 5.5 μ long with 7 μ seta from 1/3-1/2; tarsus 6.5 μ long; claw 9.5 μ long; female featherclaw 6-rayed. Hindleg 25 μ long, tibia 4 μ long, tarsus 6.5 μ long, claw 8.5 μ long. Sternal line of moderate length, indicating a posterior divergence. Coxae generally granular; first setiferous coxal tubercles ahead of second and slightly ahead of anterior coxal approximation; second coxal tubercles well ahead of level of third setiferous tubercles. Abdominal thanosome with about 59 rings, the rings well microtuberculate; microtubercles pointed over ring margins, especially laterally and ventrally. Lateral seta 25 μ long and on about ring 7 behind shield; first ventral seta 48 μ long, on ring 20; second ventral 13 μ long, on ring 37. Telosome with 6 rings; rings with fine microtubercles on margins; telosomal seta 22 μ long. Accessory seta 6 μ long. Female genitalia 10 μ long by 16 μ wide; female coverflap with about 12 long longitudinal ribs and granular basally; genital seta 17 μ long.

Male 160 μ -170 μ long; featherclaw 5-rayed.

Type locality: 31 miles north of San Luis Potosi, Mexico

Collected: July 17, 1974 by D. M. Tuttle, E. W. Baker,
and M. J. Abbatiello

Host: Ambrosia sp, Compositae, order Campanulate

Relation to host: it is not possible to state what the mite does on its host.

Type material: a type slide and two paratype slides are on hand.
There is also a bottle of mites in liquid.

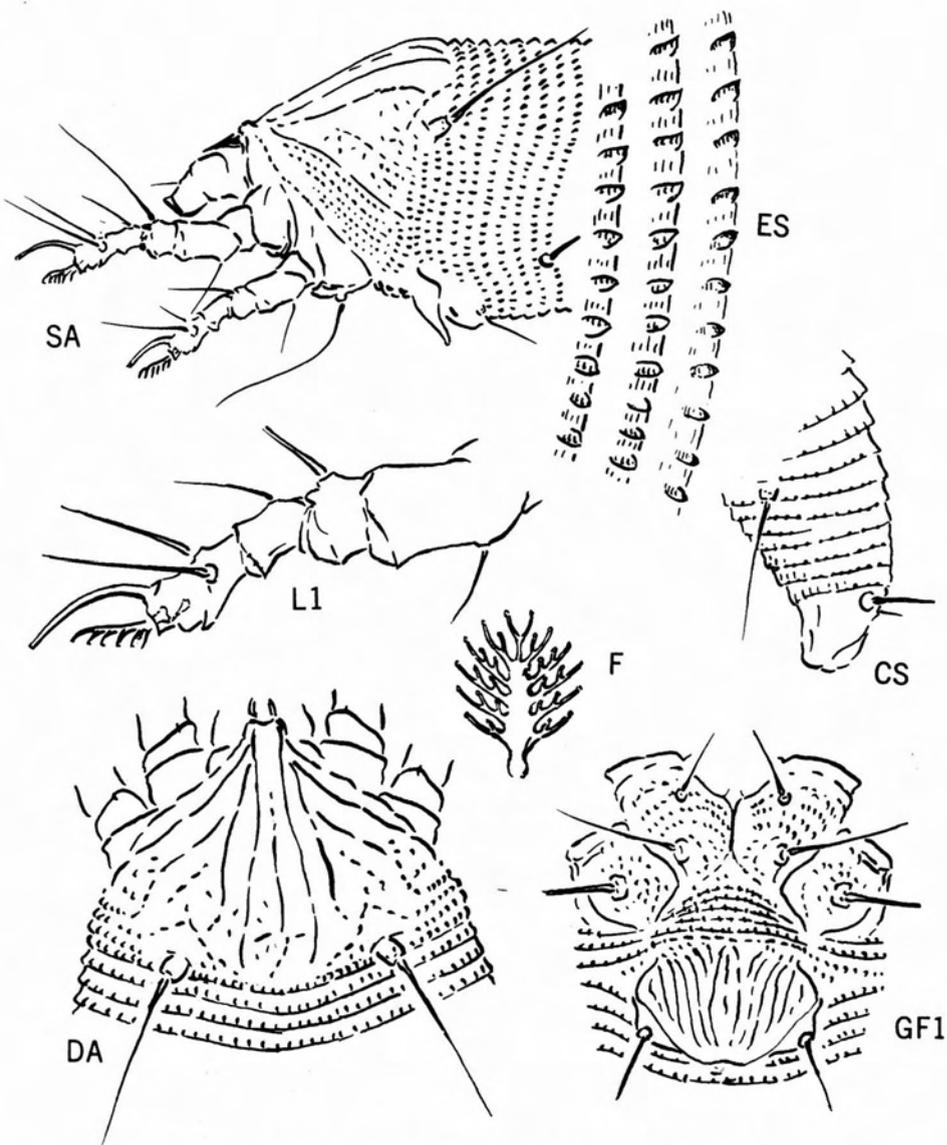


Plate 5 - *Eriophyes potosensis*, new species

Eriophyes trinervis, new species

Plate 6

Trinervis makes numerous bead galls on its host and is somewhat similar to the California species *baccharices*. (*Eriophyes baccharices* (K.) Eriophyid Studies XV, Bul. Cal. Dept. Agr. XXXIV(3):139; 1945; host- *Baccharis viminea* DC). The species *baccharices* also makes bead galls on its host but differs from *trinervis* by having larger microtubercles with much more prominent points.

Female (*trinervis*) measured from front point on shield to terminal lobes 155 μ -170 μ long, about 56 μ thick; a robust species, probably light yellowish-white in color in life. Rostrum 29 μ long, curved down; ant-apical seta 5 μ long. Shield 29 μ long by 40 μ wide, subsemicircular in anterior outline. Median shield line faint anteriorly, somewhat sinuate and broken to rear. Admedian shield lines complete, gradually diverging, slightly recurved outwards to rear. Submedian shield lines rather faint ahead of dorsal tubercles; first submedian fading at about 3/4; second submedian subparallel to first, joining short cross line from first at about 2/3 and fading ahead of dorsal tubercle. Laterally the shield with branching curved lines, a band of granules above coxae and 3-4 partial rings below dorsal tubercle. Dorsal tubercles 23 μ apart; dorsal setae 27 μ long, diverging to rear. Foreleg from trochanter base 30 μ long; tibia 6 μ long, with 5 μ seta at 1/3; tarsus 6 μ long; claw 7.5 μ long, curved; featherclaw 5-rayed. Hindleg 28 μ long, tibia 6 μ long, tarsus 6 μ long, claw 8 μ long. Coxae with moderate sternal line forking between second tubercles; first setiferous coxal tubercles farther apart than second and behind level of front end of sternal line; second coxal tubercles well ahead of level of third tubercles. Abdominal thanosome with about 49 rings; completely microtuberculate, the microtubercles small, bead-like, ahead of rear ring margins, slightly pointed below. Lateral seta 17 μ long, on ring 8 behind shield; first ventral seta 20 μ long, on ring 19; second ventral seta 6 μ long, on ring 31. Abdominal thanosome with 7 rings; completely microtuberculate, the microtubercles more widely separated than on thanosome and pointed over ring margins. Telosomal seta 21 μ long. Accessory seta 3 μ long. Female genitalia 14 μ long by 21 μ wide; coverflap with 6-7 longitudinal ribs; seta 9 μ long. Male 120 μ long.

Type locality: Humocaro Alto, State of Lara, Venezuela

Collected: October 16, 1974, by Ernesto Doreste and Orlando Aponte

Host: *Baccharis trinervis* (Lam.) (Compositae-Campanulatae)

Locally known as "Chilae"

Relation to host: The mites make numerous upper surface bead galls on the leaves, sometimes causing deformation.

Type material: Dry leaves with mites and galls and the above data
A type slide with the above data
Two paratype slides

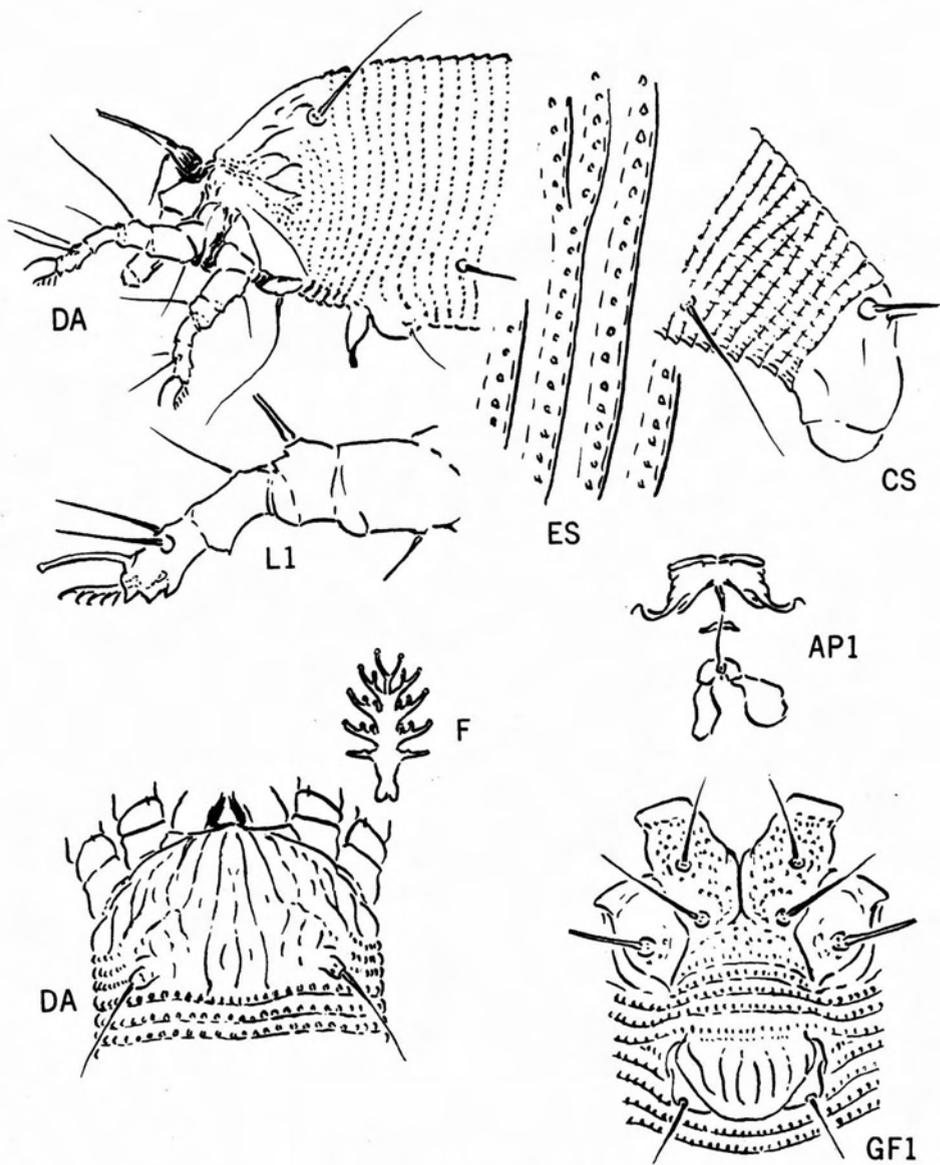


Plate 6 - *Eriophyes trinervis*, new species

Eriophyes prostrati, new species

Plate 7

Prostrati is a bud mite and makes no leaf galls on its host, which is Ceanothus prostratus, common name 'mahala mat'. A similar Ceanothus-infesting species is Eriophyes ceanothi K. (Ref. - Eriophyid Studies V, Bul. Cal. Dept. Agr. Vol. XXVIII(5):330, 1939). Ceanothi infests Ceanothus velutinus Dougl. at higher levels in the mountains, and makes small bead galls on the leaves. Prostrati differs from ceanothi by having solid shield lines, and by having double-forked submedian lines ahead of the dorsal shield tubercles.

Female from front of shield to termen 160 μ -230 μ long, about 48 μ thick. Body wormlike and light yellowish-white. Rostrum 21 μ long, curved down; antapical seta minute. Shield 26 μ long by 35 μ wide; design composed of solid lines. Median line almost complete, ending a little before rear shield margin in dart-shaped mark. Admedian lines complete sinuate, gradually diverging and somewhat recurved at end. Submedian lines branched: first and second submedians double branched in front of dorsal tubercle, and with lateral branches to granular area above coxae. Two or three partial rings below dorsal tubercles. Dorsal tubercles 18 μ apart; dorsal setae 33 μ long, diverging to rear. Foreleg from trochanter base 25 μ long; tibia 5 μ long, with 4 μ seta at 1/3; tarsus 6 μ long; claw 6 μ long, bent down; 4-rayed featherclaws. Hindleg 23 μ long, tibia 4 μ long, tarsus 5 μ long, claw 8 μ long. Coxae with some granules; sternal line of moderate length and forked in between second tubercles; first setiferous coxal tubercles ahead of second and about opposite anterior end of sternal line; second tubercles well ahead of level of third tubercles. Abdominal thansome with about 50 rings; completely microtuberculate, the microtubercles elliptical and generally slightly pointed; dorsal thansosomal microtubercles becoming smaller to rear and situated on ring margins. Lateral seta 19 μ long, on ring 7 behind shield; first ventral seta 40 μ long, on ring 21; second ventral seta 10 μ long, on ring 36. Abdominal telosome with 4-6 rings, the microtubercles fine and on margins; telosomal seta 20 μ long. Accessory seta very short or absent. Female genitalia 13 μ long by 22 μ wide; coverflap with transverse curved lines basally and about 12 longitudinal ribs apically; genital seta 12 μ long.

Male 130 μ -170 μ long.

Type locality: Six miles west of McCloud, Shasta County, California

Collected: August 31, 1953, by the writer

Host: Ceanothus prostratus Benth. (Rhamnaceae-Rhamnales) mahala mat

Relation to host: the mites are bud mites

Type material: Three envelopes with plant parts bearing mite mummies of two species - this Eriophyes and an Aculops.

A type slide, so labelled

Five paratype slides, some bearing Aculops specimens

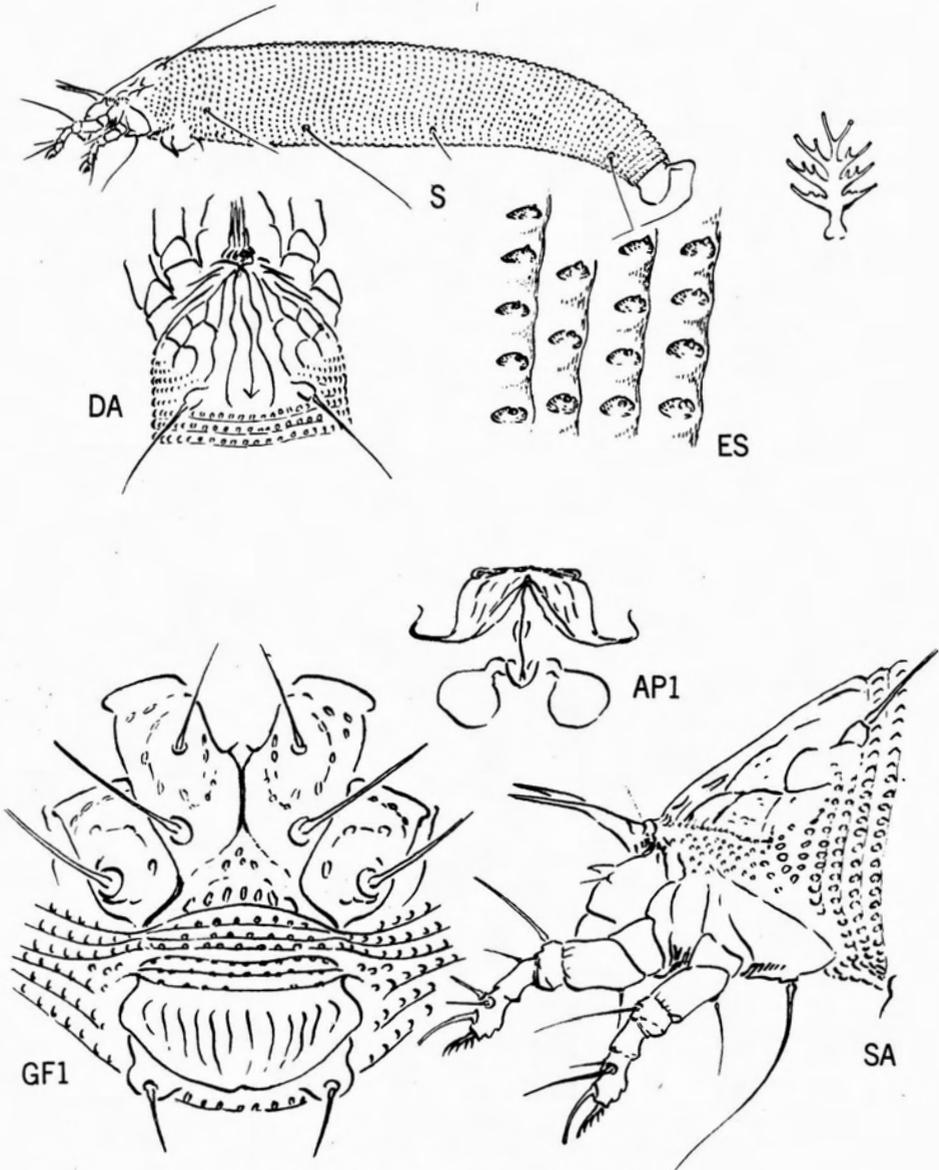


Plate 7 - *Eriophyes prostrati*, new species

Eriophyes protii, new species

Plate 8

Important features of protii are: 1. the four-rayed featherclaw; 2. small, pointed microtubercles in rows on rear margins of the rings; 3. short admedian lines on rear third of shield partially outlining an oval area in center; 4. the host, Protium sp., a plant belonging to the Burseraceae of the order Geraniales. These principal features of protii are almost exactly the same as Eriophyes pallidum (K.) (Eriophyid Studies B-12:3, Cal. Dept. Agr. Bur. Entomology, June 1964). This pallidum has 6-rayed featherclaws and makes leaf blisters on Lycium pallidum Miers. Lycium is a member of the Solanaceae of the plant order Tubiflorae. A second species which is also closely related is E. caulicecis K. (E.S. C-7:17, USDA Agricultural Research Service Dec. 1972) which makes stem galls on Lycium andersonii Gray. This caulicecis also has 6-rayed featherclaws.

Larger female form from front of shield to terminal lobes 170 μ -205 μ long, 50 μ -60 μ thick; smaller type female 130 μ -150 μ long, about 45 μ thick. Rostrum 22 μ long, somewhat downcurved; antapical rostral seta 5.5 μ long. Shield 27 μ long by 40 μ wide, subtriangular with sides somewhat outcurved. Shield lines present only on rear third with short admedians partially outlining an oval central area, and with short dashes and granules by outer and rear margins; shield with granular bands laterally and three partial rings below dorsal tubercles. Dorsal tubercles 21 μ apart, on rear margin; dorsal setae 37 μ long, projecting diagonally to rear. Foreleg 32 μ long from trochanter base; tibia 6 μ long, with 6 μ seta from 1/4; tarsus 8 μ long; claw 7.5 μ long, somewhat downcurved; featherclaw 4-rayed. Hindleg 31 μ long, tibia 6 μ long, tarsus 7.5 μ long, claw 8.5 μ long. Abdominal thanosome with about 51 rings, completely microtuberculate the microtubercles small, pointed, in lines ahead of rear margins of rings. Lateral seta 25 μ long, on ring 9 behind shield; first ventral seta 53 μ long, on ring 20; second ventral 50 μ long, on ring 33. Telosome with 5 rings, the microtubercles finer than on thanosome and tending to be elongate, especially below. Telosomal seta 21 μ long. Accessory seta 4.5 μ long. Female genitalia 15 μ long by 18 μ wide; coverflap with 8-10 longitudinal ribs; genital seta 19 μ long.

Male comparable in size to small form females; male length 130 μ -168 μ .

Type locality: Mesa de Esnujaque, State of Truillo, Venezuela

Collected: February 22, 1967 by E. Doreste

Host: Protium sp., plant family Burseraceae, order Geraniales

This host known locally as Guacharaco Blanco or Tacamahaco Blanco

Relation to host: the mites make bead galls in leaves with most of the gall projecting on the underside of the leaf and with an underside opening. Many leaves are severely galled.

Type material: a type slide and four paratypes with the above data also dry leaves from which the slides were made

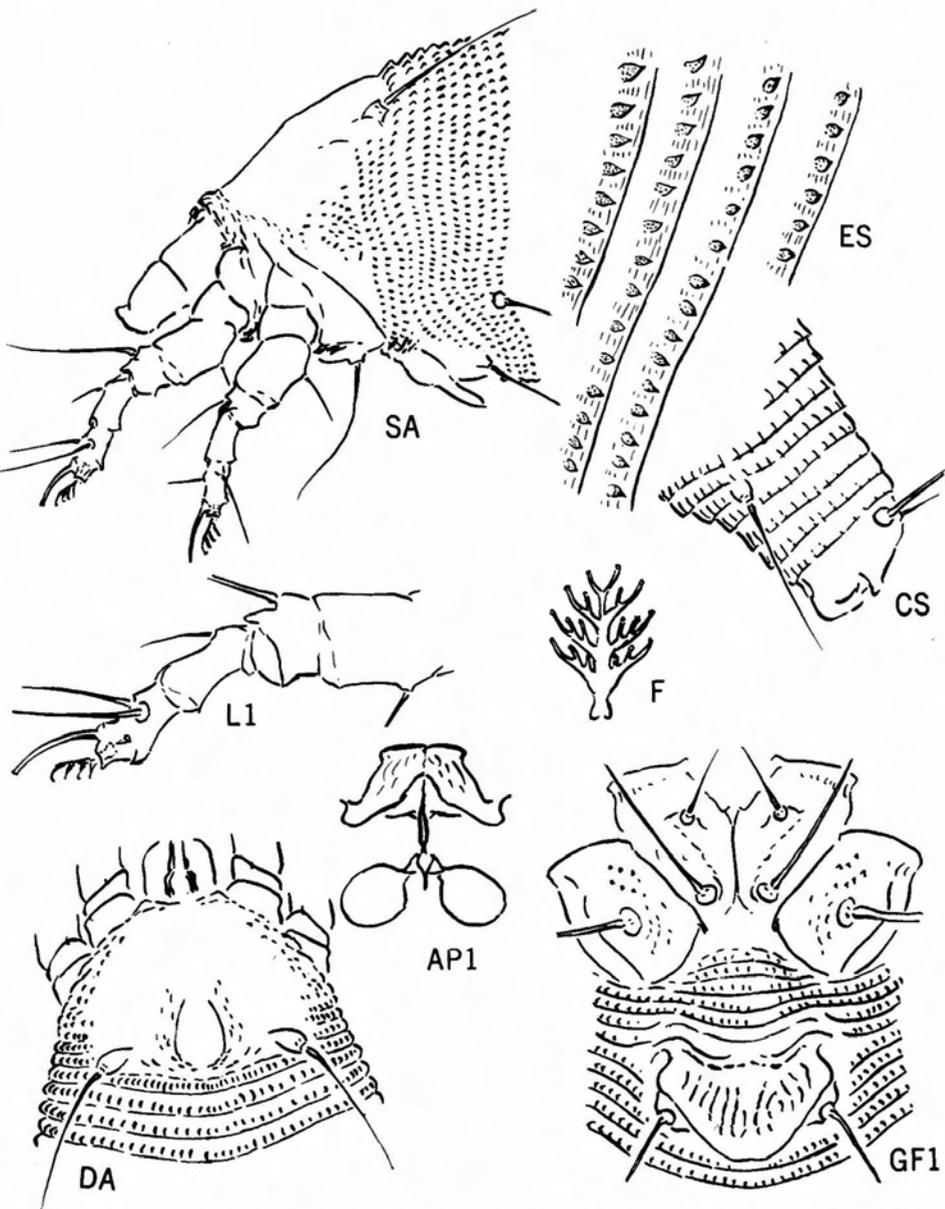


Plate 8 - *Eriophyes protii*, new species

Eriophyes sodomaei, new species

Plate 9

The principal recognition characters on sodomaei, which is a species with 4-rayed featherclaws, are: median line incomplete anteriorly but without a dart-shaped mark at rear; complete admedian lines recurving centrad at rear; almost complete first submedian line; second submedians merging anteriorly; rather straight and slender claws; thanosomal microtubercles which are rounded. This Eriophyes is associated with a species of Paraphytoptus (herein named) as is the case with many species of Eriophyes living on hairy plants. Most of these combinations of Eriophyes and Paraphytoptus probably occur on plant species in the Compositae, but any plant species offering the proper hairy habitat around the buds can harbor such associations. Sodomaei differs from some of these Composit-infesting Eriophyes by having rounded microtubercles, by having a complete first submedian line, and by having fewer granulations on the shield surface.

Female 168 μ -236 μ long, 39 μ thick; wormlike and probably light yellowish-white in life. Rostrum 16 μ long, curved down; antapical rostral seta 3 μ long. Shield 29 μ long by 23 μ wide; subsemicircular in anterior outline, Median shield line incomplete anteriorly, somewhat broken, ending in short dashes to rear; admedian lines complete, gradually diverging, sinuate, recurving centrad to rear. First submedian line complete, subparallel to admedian, sinuate, ending just on inner side of dorsal tubercle. Second submedians beginning as one line at about 1/5, forking, ending in granulations ahead of rear shield margin. Laterally the shield with granulations above coxae and about 3 partial rings below dorsal tubercles. Dorsal tubercles 18 μ apart; dorsal setae 32 μ long, somewhat divergent to rear. Foreleg from trochanter base 27 μ long; tibia 5.5 μ long, with 5 μ seta from 1/3; tarsus 7 μ long; claw slender rather straight, 8 μ long; featherclaw 4-rayed. Hindleg 24 μ long, tibia 4 μ long, tarsus 6.5 μ long, claw 9 μ long. Coxae with granules; sternal line narrow, slightly forked to rear. First setiferous coxal tubercles opposite anterior coxal approximation and ahead of second tubercles; second tubercles somewhat ahead of level of third tubercles. Abdominal thanosome with about 59 rings; microtubercles slightly ahead of ring margins and rounded, more elliptical dorsally; microtubercles fading dorsally to rear. Lateral seta 9 μ long, on ring 10 behind shield; first ventral seta 38 μ long, on ring 22; second ventral seta 4 μ long, on ring 34. Abdominal telosome with 8 rings; microtubercles below somewhat elongate, suppressed dorsally; seta 19 μ long. Accessory seta 5 μ long. Female genitalia 16 μ long by 20 μ wide; female coverflap with about 16 longitudinal ribs; genital seta 6 μ long.

Male 160 μ long.

Type locality: The Ark, Aberdare National Park, Kenya

Collected: September 23, 1975, by Tokuwu Kono

Host: Solanum sodomaeum L. (Solanaceae, Tubiflorae) sodom apple

Relation to host: the mites live in thick bud hairs. While the underside of the leaves is also hairy the mites seem to not favor that habitat.

Type material: Dry leaves from the above area, with mite mummies
A type slide so labeled and with above data
Eight paratype slides

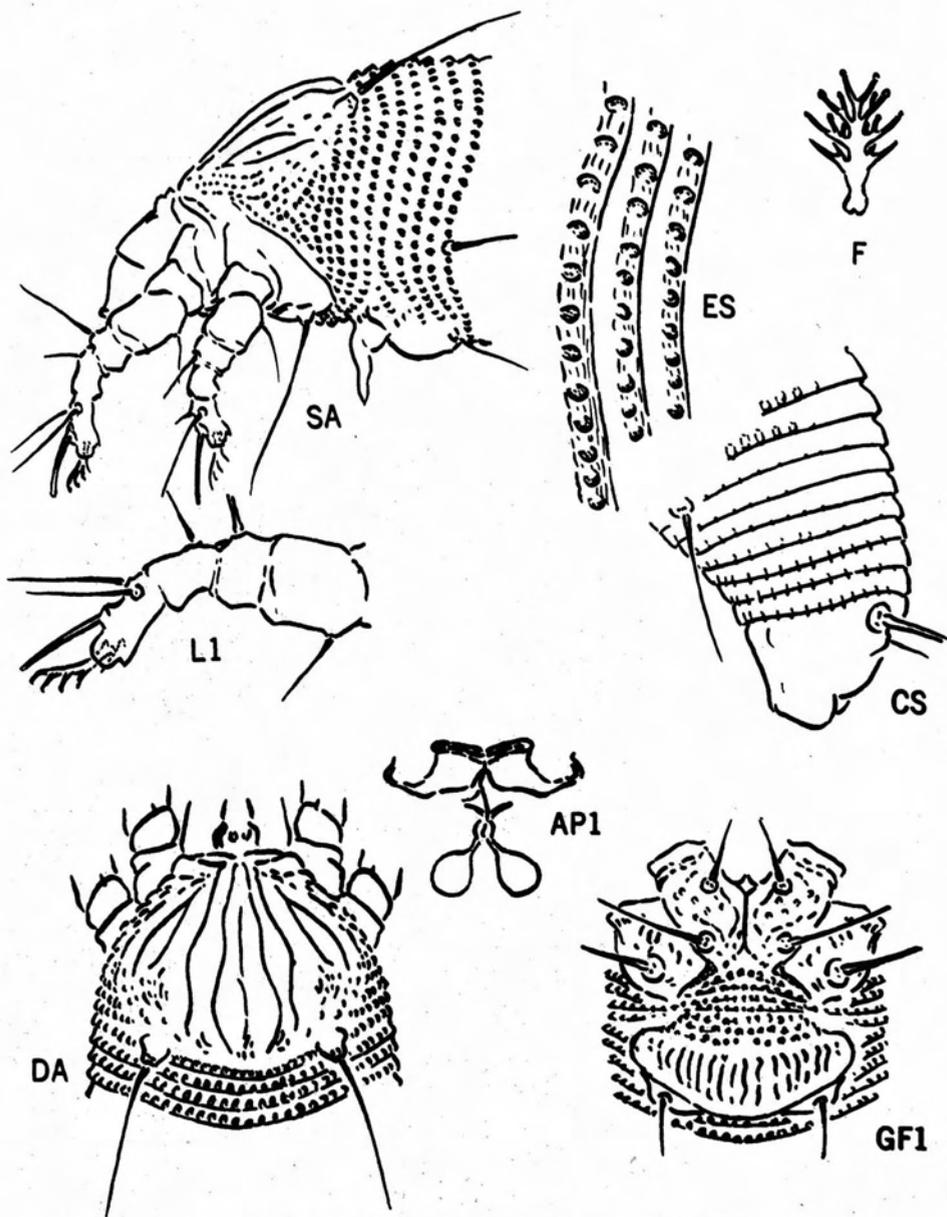


Plate 9 - *Eriophyes sodomaei*, new species

Phytoptus adenostomae, New species

Plate 10

Deuterogyny among eriophyid mites has seemed to be entirely a relationship between deciduous or partially deciduous hostplants in temperate or cold areas in the northern hemisphere and the respective mite species that are peculiar to the individual host. Many examples of deuterogyny and this host relationship are available for citation. Aculus ligustri (K.) (Eriophyid Studies (I), Bul. Cal. Dept. Agr. XXVII(2):190, June 1938) is a deuterogynous rust mite that lives on the partially deciduous hedge privet, Ligustrum ovalifolium Haask. It is therefore of interest that Phytoptus adenostomae n. sp. is an eriophyid that lives on an entirely evergreen host and that displays the two forms of females characteristic of deuterogyny. The evergreen host is Adenostoma, a member of the chaparral in California, that has needle-like leaves which leaves are about 3 to 8 millimeters long.

The new species here named is close to Phytoptus ilicifoliae (K.) (Eriophyid Studies XI, Bul. Cal. Dept. Agr. XXX(2):204, May 1941) but differs not only as regards host but that also possesses a median shield line on the rear half of the shield.

Protogyne 120 μ -140 μ long, 40 μ thick; body wormlike, light yellowish-white in color. Rostrum 21 μ long, projecting ahead and slightly curved down; antapical seta very small. Cephalothoracic shield 20 μ long by 31 μ wide, subsemicircular in anterior outline. Central shield design consisting of longitudinal lines on rear 1/2; median line present and ending in a slight dart-shaped mark; admedians subparallel to median and somewhat convex outwardly. A usually short line directed forward just laterad of dorsal tubercle and a line from rear of shield above lateral granules. Lateral granular area above coxae consisting of principally longitudinal lines patterned after the manner of the pyri group. Two partial rings below dorsal tubercle. Dorsal tubercles slightly ahead of rear shield margin and 11 μ apart; dorsal setae 23 μ long, directed divergently ahead. Foreleg from trochanter base 25 μ long; tibia 5.5 μ long, with 4 μ seta from 1/4; tarsus 6 μ long; claw 5.5 μ long, featherclaw 4-rayed. Hindleg 24 μ long, tibia 3.5 μ long, tarsus 6 μ long, claw 7 μ long. Coxae with some granules; sternal line of moderate length and undivided posteriorly. First setiferous coxal tubercles ahead of second and ahead of level of anterior coxal approximation. Second coxal tubercles well ahead of level of third tubercles. Abdominal thanosome with about 53 rings. Protogyne microtubercles subcircular, slightly ahead of rear ring margins, and slightly pointed. Lateral seta 19 μ long, on ring 8 behind shield; first ventral seta 23 μ long, on ring 20; second ventral 5 μ long, on ring 35. Telosome with 6 rings, the microtubercles mostly fine and elongate, projecting over ring margins, larger dorsally anteriorly. Telosomal seta 20 μ long. Accessory seta 6 μ long. Female genitalia 15 μ long by 17 μ wide; coverflap with about 10 longitudinal ribs; seta 6 μ long.

Deutogyne the same size as protogyne but microtubercles distinctly larger, subelliptical, not pointed, and touching ring margins.

Male 90 μ -110 μ long, 35 μ thick, with microtubercles like protogyne. Males present during winter.

Type locality: Shingle Springs district, El Dorado County, Cal.

Host: Adenostoma fasciculatum H. & A., chamise, greasewood
Plant family Rosaceae, order Rosales

Relation to host: the mites make galls on the needle-like leaves, more or less deforming the leaves. The galls are partially open and have internal lobes that supply mite space.

Type material: a type slide and paratype from Shingle Springs
two paratypes from Saratoga Springs district, Santa Clara County
one paratype from Lambs Canyon, south of Beaumont, Riverside County

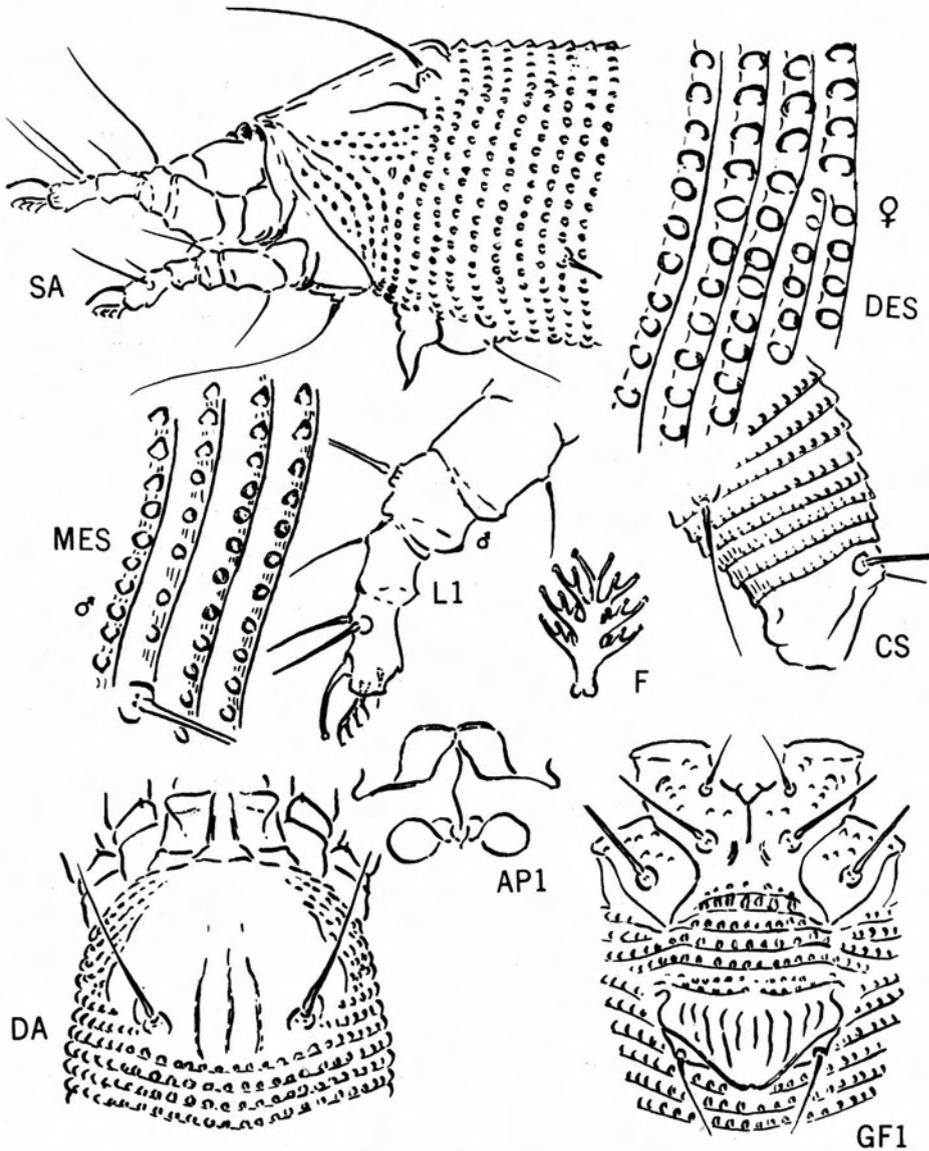


Plate 10 - *Phytoptus adenostomae*, new species
MES - male lateral microtubercles; DES - deutogyne lateral microtubercles

Nothopoda dorestei, new species

Plate 11

Dorestei differs from the genotype, rapanae, (Eriophyid Studies XVII Bul. Cal. Dept. Agr. XL(3):96, 1951, host- Rapanea guianensis) by having shield granulations that extend onto the middle of the shield, and by having coxae which are more fused across center. I am pleased to name this species for the collector, Ernesto Doreste S. of the Agronomy Faculty of the University of Venezuela.

Female from front end of shield to rear lobes 150μ - 210μ long, about 40μ thick; elongate wormlike; color in life probably light yellowish-white. Body tapers to rear. Rostrum 15μ long, projecting down; antapical seta 2.5μ long. Shield 28μ long by 35μ wide; shield entirely covered with fine granulation. Median shield line complete except for front end. Admedian shield lines complete, sinuate, gradually diverging to rear. Submedian lines faint or absent. Laterally the shield with some curved longitudinal lines above coxae. Foreleg with tibiotarsus bent down; length from trochanter base 25μ - 27μ ; tibiotarsus 10μ - 11μ long; claw 4μ long and directed centrally; featherclaw 4-rayed. Hindleg 21μ long, tibiotarsus 9μ long, claw 5μ long. Forecoxae well fused across center and generally granulate, the second coxae also granulate apically; second setiferous coxal tubercles well ahead of level of third tubercles. Abdominal thanosome with about 68 rings. Thanosomal microtubercles rather elongate, especially dorsally; more beadlike ventrally especially to rear. Lateral seta 15μ long, on ring 8 behind shield; first ventral seta 55μ long, on ring 22; second ventral 4μ long, on ring 41. Abdominal telosome with 9 rings, completely microtuberculate, the microtubercles fine and slightly pointed over ring margins. Telosomal seta 13μ - 16μ long. Accessory seta absent. Female genitalia 15μ long by 22μ wide; coverflap basally granulate, followed by 2 or 3 concentric curved cross lines. Genital seta 7μ long.

Male 160μ - 180μ long.

Type locality: Cagua, State of Aragua, Venezuela

Collected: August 7, 1975, by Ernesto Doreste and Orlando Aponte

Host: Piper arboreum Aublet (Piperaceae-Piperales) a wild shrub

Relation to host: The mites make erineum patches on the underside of the leaves. The erineum consists of compound-capitate papillae

Type material: An envelope with dry leaves, erineum and mite mummies
A type slide, so designated, made from these leaves
Three paratype slides



Galls of Phytoptus adenostomae
See pp. 19-20

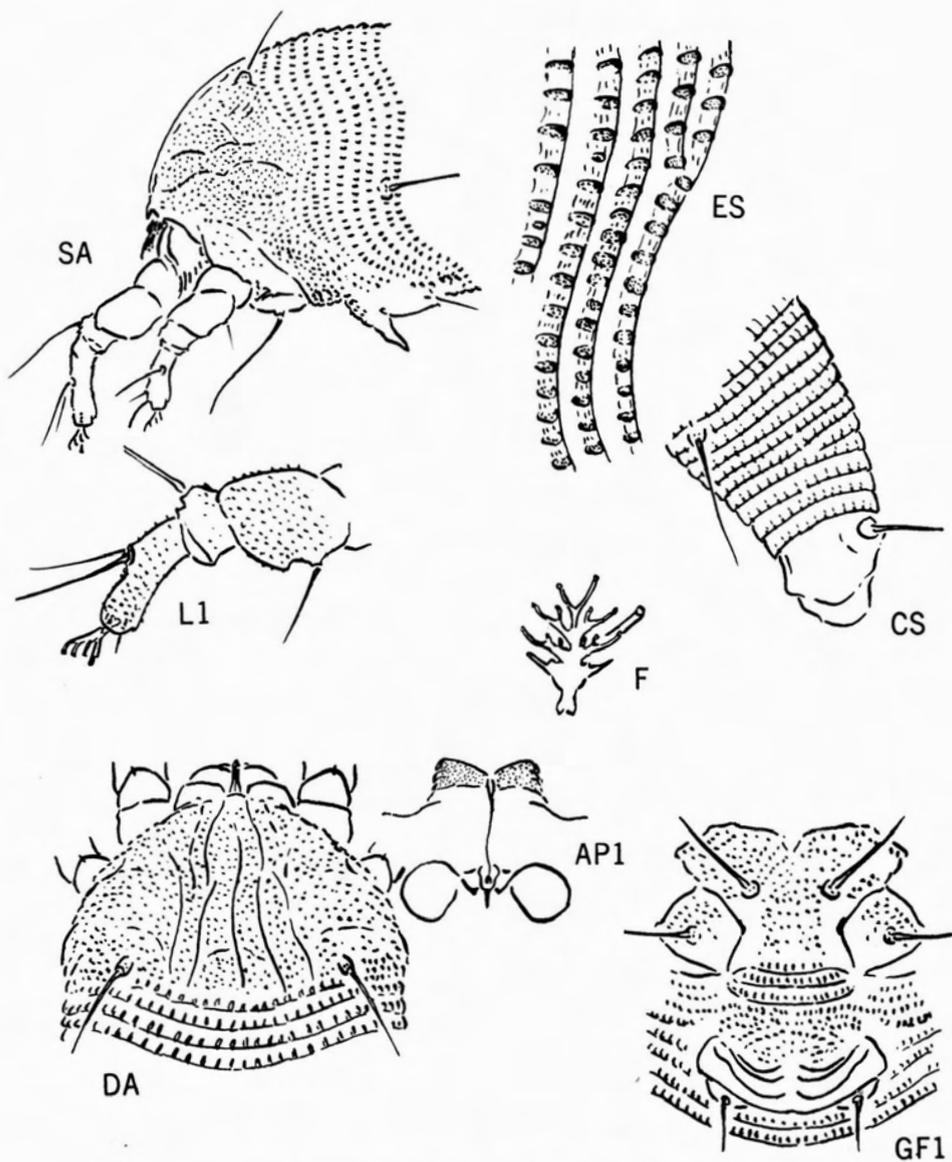


Plate 11 - Nothopoda dorestei, new species

Rhyncaphytoptus berryessa, new species

Plate 12

Berryessa is probably closest to spiniferus K. but differs in having rounded microtubercles instead of spinules on the tergites, and in having the chelicerae somewhat recurved. In addition there seems to be a slight ridge between the forecoxae. The new species was found on a scrub oak and was remarkable for being active in winter. The oak species in this case has not been determined. Its leaves are moderate in size, shining, and with edge spines. The area where it grows is along a newly cut road, and the oak is probably a hybrid. The name, berryessa, is for a formerly beautiful little valley now destroyed by a reservoir.

Female 160 μ -210 μ long, 50 μ thick; elongate-spindleform; dull yellowish in color. Rostrum 53 μ long, the chelicerae somewhat recurved. Shield 34 μ long, 50 μ wide, subtriangular; central section of shield bordered laterally by admedian lines on rear 2/3 that diverge anteriorly and converge at rear; transverse line across center just ahead of rear shield margin; a lateral longitudinal shield line with faint granulations below. Dorsal tubercles 32 μ apart; dorsal setae 30 μ long. Forelegs 42 μ long; tibia 12 μ long, with seta 14 μ long at about 1/4; tarsus 10 μ long; claw 9 μ long, tapering, strongly downcurved; featherclaw 7-rayed. Hindlegs 40 μ long, claw 10 μ long. Coxae short and stout with basal outlined quadrate sections; forecoxae approximate, thickened on inner side and with a slight ridge between; first setiferous tubercles near to and straight ahead of second tubercles, opposite nearest approximation of forecoxae; second setiferous coxal tubercles well ahead of transverse line through third tubercles. Abdomen with about 47 tergites and 70 sternites; completely microtuberculate, the tergal microtubercles as rounded projections from the rear tergite margins; on sternites these are fine rounded bead-like structures within rear margins. Lateral seta 26 μ long, on about sternite 14; first ventral seta 70 μ long, on sternite 28; second ventral 44 μ long, on sternite 41; third ventral 30 μ long, on sternite 5 from rear. Accessory seta 5 μ long. Female genitalia 26 μ wide, 20 μ long; coverflap smooth except for transverse lines of granulations basally; seta 16 μ long.

Type locality: south end of Berryessa Lake, Napa County, Cal.

Collected: February 1, 1959 by the writer

Host: Quercus sp., possibly dumosa or a relative, a small shrub

Relation to host: the mites are undersurface leaf vagrants

Type material: dry leaves with mites, a type slide, 5 paratype slides

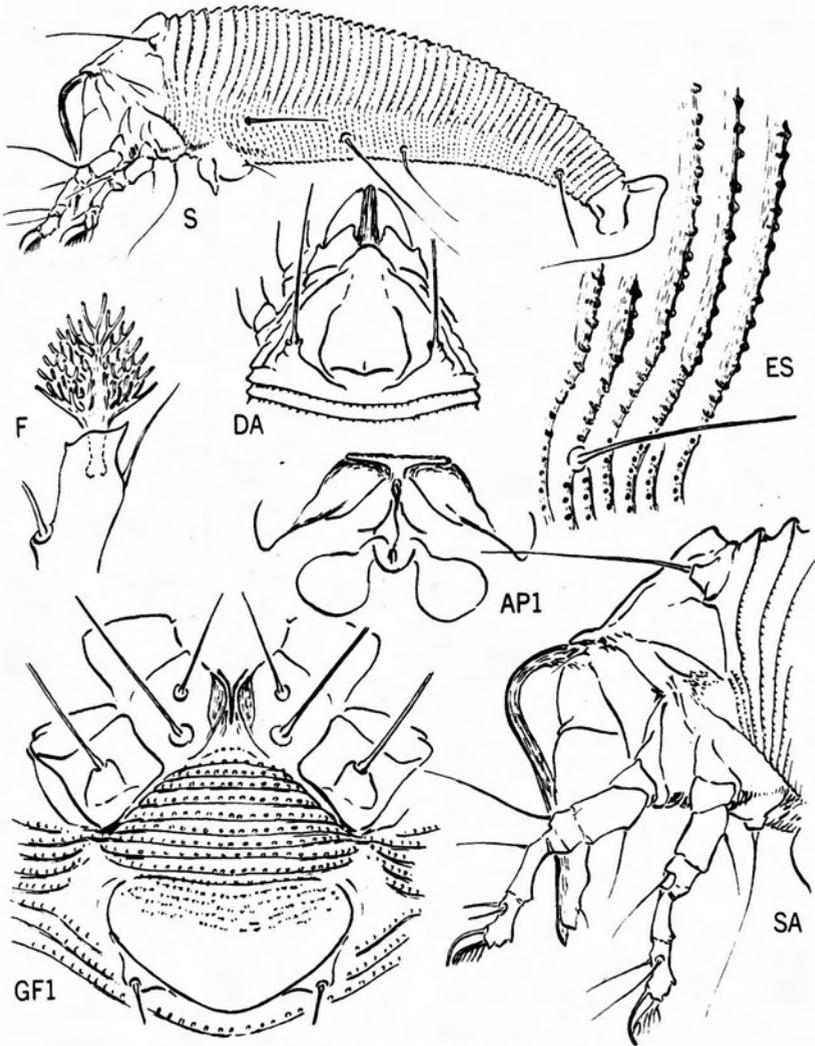


Plate 12 - *Rhyncaphytoptus berryessae*, new species